

PREFACE

The improvement in the levels of quality and effectiveness in Science Education our modern societies requires, can hardly be achieved without a strong investment and a change in the way Science Education is traditionally approached. The method that drives the pursuit of scientific knowledge should be the starting driving and guiding basis of all process of teaching/learning of Science. Leading the students to an active volunteer commitment in the learning process with an intensive and extended use of hands-on experimental activities; observing, defining, reasoning, analysing critically, deducing, discussing, experimenting...

This hands-on learning process is effective in all subjects of science, at all grades and age levels and contexts. The school plays a fundamental role not only in the learning of science but also it is, and should continue to be, of paramount importance to the healthy growth of our youngsters. Informal and non-formal learning contexts are also rather valuable especially if a hands-on investigative approach is used.

This second volume of the "Selected Papers on Hands-on Science" the Hands-on Science Network is publishing, reunites some of the most relevant works presented at the 2008, 2009, 2010 and 2011 editions of the annual International Conference on Hands-on Science. From pre-school science education to lifelong science learning and teacher training, in formal non-formal and informal contexts, the large diversified range of works that conforms this book surely renders it an important tool to schools and educators and all involved in science education and on the promotion of scientific literacy.

The Hands-on Science Network (www.hsci.info) exists to promote the development of science education and scientific literacy. It encourages a generalized use of innovative active hands-on experimental investigative approaches to science and technology education. In raising the profile and attractiveness of Science in Education, we aim to improve and generalize scientific literacy in our societies and also to increase the desirability of a career in Science for all.

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